SEQUENCE LISTING

<110> Mitchell, Lloyd G.
Garcia-Blanco, Mariano A.
Puttaraju, Madaiah
Mansfield, Gary S.

<120> METHODS AND COMPOSITIONS FOR USE IN SPLICEOSOME MEDIATED RNA TRANS-SPLICING

<130> A31304-B-A-B 069906.0132

<140> 09/756,096
<141> 2001-01-08

<150> 09/158,863
<151> 1998-09-23

<150> 09/133,717
<151> 1998-08-13

<150> 09/087,233
<151> 1998-05-28

<150> 08/766,354
<151> 1996-12-13

<150> 60/008,317
<151> 1995-12-15

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tccattcaaa aa 132

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Escherichia coli lacZ gene

<400> 29
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<210> 30
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer complimentary to the
Escherichia coli lacZ gene

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<213> Artificial Sequence

<220>
<223> Oligonucleotide primer complimentary to the
Escherichia coli lacZ gene

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<210> 32
<211> 47
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<220>
<223> Oligonucleotide primer complimentary to the
Escherichia coli lacZ gene

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<210> 33
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer complimentary to the beta
HCG6 gene (accession #X00266)

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gcatggatcc tccggagggc ccctgggcac cttccac 37

<210> 34
<211> 38
<212> DNA
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<220>
<223> Oligonucleotide primer complimentary to the beta

HCG6 gene (accession #X00266)

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ctgactgcag ggtaaccgga caaggacact gcttcacc 38

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HCG6 gene (accession #X00266)

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<210> 36
<211> 37
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<220>
<223> Oligonucleotide primer complimentary to the beta
HCG6 gene (accession #X00266)

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<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer complimentary to the
Escherichia coli lacZ gene

<400> 37
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<210> 38
<211> 21
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<220>
<223> Oligonucleotide primer complimentary to the
Escherichia coli lacZ gene

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<210> 39
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<212> DNA
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<223> Oligonucleotide primer complimentary to the
Escherichia coli lacZ gene

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<213> Homo sapien

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<210> 41
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<400> 41
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<210> 42
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<400> 42
acctctgcag acttcacttc taatgatgat 30

<210> 43
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<212> DNA
<213> Homo sapien

<400> 43
acctgcggcc gcctaatgat gatgatgatg atgctcttct agttggcatg c 51

<210> 44
<211> 32
<212> DNA
<213> Homo sapien

<400> 44
gacctctcga gggatttggg gaattatttg ag 32

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<400> 45
ctgacctgcg gccgctacag tgttgaatgt ggtgc 35

<210> 46
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<400> 50
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<400> 51
gacctctcga gggatttggg gaattatttg ag 32

<210> 52
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<213> Homo sapien

<400> 52
aactagaagg cacagtcgag g 21

<210> 53
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> trans-spliced product containing Human chorionic
gonadotropin gene 6 sequences and Corynebacterium

diptheriae diptheria toxin A sequence

<400> 53
gagatgttcc agggcgtgat gatg 24

<210> 54
<211> 127
<212> RNA
<213> Artificial Sequence

<220>
<223> PTM intramolecular base paired stem

<221> misc_feature
<222> (57)...(70)
<223> Loop comprising a combination of 14 nucleotides
according to specification

<400> 54
gcuagccugg gacaaggaca cugcuucacc cgguuaguag accacagccc ugagccnnnn 60
nnnnnnnnnn aucguuaacu aauaaacuac uaacugggug aacuucuguu uuuuucucga 120
gcugcag 127

<210> 55
<211> 127
<212> RNA
<213> Artificial Sequence

<220>
<223> PTM intramolecular base paired stem

<221> misc_feature
<222> (57)...(70)
<223> Loop comprising a combination of 14 nucleotides
according to specification

<400> 55
gcuagccugg gacaaggaca cugcuucacc cgguuaguag accacagccc ugagccnnnn 60
nnnnnnnnnn aucguuaacu aauaaacuac uaacugggug aacuucugua uuauucucga 120
gcugcag 127

<210> 56
<211> 127
<212> RNA
<213> Artificial Sequence

<220>
<223> PTM intramolecular base paired stem

<221> misc_feature
<222> (57)...(70)
<223> Loop comprising a combination of 14 nucleotides
according to specification

<400> 56
gcuagccugg gacaaggaca cugcuucacc cgguuaguag accacagccc ugagccnnnn 60
nnnnnnnnnn aucguuaacu aauaaacuac uaacugggug aaguucuguc cuugucucga 120
gcugcag 127

<210> 57
<211> 132
<212> DNA
<213> Artificial Sequence

<220>
<223> trans-spliced product containing Human chorionic gonadotropin gene 6 sequences and Corynebacterium diptheriae diptheria toxin A sequences

<400> 57
caggggacgc accaaggatg gagatgttcc agggcgctga tgatgttgtt gattcttctt 60
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<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Artificial Sequence derived from Escherichia coli lacZ gene

<400> 58
gaattcggta ccatgggg 18

<210> 59
<211> 33
<212> DNA
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<220>
<223> Artificial Sequence derived from Escherichia coli lacZ gene

<400> 59
cgtttacagg taagaggatc ctccggaggg ccc 33

<210> 60
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Artificial Sequence derived from Escherichia coli lacZ gene

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<210> 61
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<212> DNA
<213> Artificial Sequence

<220>
<223> trans-spliced product containing Escherichia coli lacZ gene sequences and Human chorionic

gonadotropin gene 6 exon 2 sequences

<400> 61
cagcagcccc tgtaaacggg gatac 25

<210> 62
<211> 286
<212> DNA
<213> Artificial Sequence

<220>
<223> trans-spliced product containing Escherichia coli
lacZ gene sequences

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agggcggctt cgtctaataa tgggactggg tggatcagtc gctgattaaa tatgatgaaa 180
acgggcaacc cgtggtcggc ttacggcggt gattttggcg atacgccgaa cgatcgccag 240
ttctgtatga acggtctggt ctttgccgac cgcacgccgc atccag 286

<210> 63
<211> 196
<212> DNA
<213> Artificial Sequence

<220>
<223> trans-spliced product containing Escherichia coli
lacZ gene sequences

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gtaacagtct tggcggtttc gctaaatact ggcaggcgtt tcgtcagtat ccccgtttac 120
aggggctgct gctgttgctg ctgctgagca tgggcgggac atgggcatcc aaggagccac 180
ttcggccacg gtgccg 196

<210> 64
<211> 500
<212> DNA
<213> Artificial Sequence

<220>
<223> trans-spliced product comprising cystic fibrosis
transmembrane regulator-derived sequences and His
tag sequence

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aacgttgctc gagtactaac tggtacctct tctttttttt cctgcagact tcacttctaa 120
tgatgattat gggagaactg gagccttcag agggtaaaat taagcacagt ggaagaattt 180
cattctgttc tcagttttcc tggattatgc ctggcaccat taaagaaaat atcatctttg 240
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ctggaaggtg ccactcccac 500

<210> 65

<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Splice junction sequence

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<210> 66
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> C terminal residues from glutathione -S-
transferase

<400> 66
Asp Tyr Lys Asp Asp Asp Lys
1 5

<210> 67
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Artificial sequence comprising sequences derived
from Escherichia coli lacZ gene

<400> 67
ggagttgatc ccgtc 15

<210> 68
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Artificial sequence comprising sequences derived
from Escherichia coli lacZ gene

<400> 68
gcagtgtcct tgtgcggtta ccctgcaggg cggcttc 37

<210> 69
<211> 120
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<223> Binding domain of PTM

<400> 69
gattcacttg ctccaattat catcctaagc agaagtgtat attcttattt gtaaagattc 60
tattaactca tttgattcaa aatatttaaa atacttcctg tttcatactc tgctatgcac 120

<210> 70
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Spacer sequence of PTM

<400> 70
aacattatta taacgttgct cgaa 24

<210> 71
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Branch point, pyrimidine tract and acceptor splice
site of PTM

<400> 71
tactaactgg tacctcttct ttttttttg atatcctgca gggcggc 47

<210> 72
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Donor site and spacer sequence of PTM

<400> 72
tgaacggtaa gtgttatcac cgatatgtgt ctaacctgat tcgggccttc gatacgctaa 60
gatccaccgg 70

<210> 73
<211> 260
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<223> Binding domain of spacer sequence

<400> 73
tcaaaaagtt ttcacataat ttcttacctc ttcttgaatt catgctttga tgacgcttct 60
gtatctatat tcatcattgg aaacaccaat gatttttctt taatggtgcc tggcataatc 120
ctggaaaact gataacacaa tgaaattctt ccactgtgct taaaaaaacc ctcttgaatt 180
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<400> 74
cgctggaaaa acgagcttgt tg 22

<210> 75
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<220>
<223> Oligonucleotide

<400> 75
actcagtgtg attccacctt ctc 23

<210> 76
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 76
gacctctgca gacttcactt ctaatgatga ttatgg 36

<210> 77
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<220>
<223> Oligonucleotide primer

<400> 77
ctaggatccc gttctttttgt tcttcactat taa 33

<210> 78
<211> 33
<212> DNA
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<220>
<223> Oligonucleotide primer

<400> 78
ctagggttac cgaagtaaaa ccatacttat tag 33

<210> 79
<211> 35
<212> DNA
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<220>
<223> Oligonucleotide primer

<400> 79
gcatggttac cctgcagggg ctgctgctgt tgctg 35

<210> 80
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer

<400> 80
ctgaaagctt gttaaccagc tcaccatggt ggggcag 37

<210> 81
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Binding domain of PTM molecule

<400> 81
acccatcatt attaggtcat tat 23

<210> 82
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer

<400> 82
gatcaaatct gtcgatcctt cc 22

<210> 83
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<223> Oligonucleotide primer

<400> 83
ctgatccacc cagtcccatt a 21

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<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer

<400> 84
gactgatcca cccagtccca ga 22

<210> 85
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<220>
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<221> misc_feature
<222> (7)...(30)
<223> spacer sequence, see SEQ ID NO 70

<400> 85
ccgcggnnnn nnnnnnnnnn nnnnnnnnnn gggttccggt accggcggct tc 52

<210> 86
<211> 71
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 86
ttttatcccc gtttacaggg cggcttcgtc tgggactggg tggatcagtc gctgattaaa 60
tatgatgaaa a 71

<210> 87
<211> 66
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 87
tttggcgata cgccgaacga tcgccagttc tgtatgaacg gtctggtctt tgccgaccgc 60
acgccg 66

<210> 88
<211> 192
<212> DNA
<213> Artificial Sequence

<220>
<223> PTM sequences

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tccggccgca tcagcttttg cagccaattc agttggatca tgcccggtac catcaaggag 120
aacataatct tcggcgtcag ttacgacgag taccgctatc gctcggtgat taaggcctgt 180
cagttggagg ag 192

<210> 89
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 89
gagcaggcaa gacgagcttg ctcat 25

<210> 90
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 90
gagaacataa tcttcggcgt cagttacg 28

<210> 91
<211> 30
<212> DNA
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<220>
<223> Oligonucleotide

<400> 91
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<210> 92
<211> 192
<212> DNA
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<220>
<223> Oligonucleotide

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acgagcttgc tcatgatgat catgggcgag ttagaaccaa gtgaaggcaa gatcaaacat 60
tccggccgca tcagcttttg cagccaattc agttggatca tgcccggtac catcaaggag 120
aacataatct tcggcgtcag ttacgacgag taccgctatc gctcggtgat taaggcctgt 180
cagttggagg ag 192

<210> 93
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> PTM sequences

<400> 93
aaatatcatt ggtgtttctt atgatga 27

<210> 94
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 94
ccaactagaa gaggacatct ccaagtttgc 30

<210> 95
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 95
atgatcatgg gcgagttaga accaagtgag 30

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<212> DNA
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<220>
<223> Oligonucleotide

<400> 96
aaaatatcat ctttggtgtt tcctatg 27

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<220>
<223> Oligonucleotide

<400> 97
ccaactagaa gaggacatct ccaagtt 27

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<220>
<223> 5' splice site

<400> 98
cgtttacagg taagtggatc c 21

<210> 99
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> 3' splice site

<400> 99
ctgcagggcg gcttcgtcta ataatgg 27

<210> 100
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Sequence from trans-splicing domain

<400> 100
tactaactgg tacctcttct ttttttttg atatcctgca gggcggc 47

<210> 101
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<220>
<223> CFTR PTM

<400> 101
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agaccaattt tgaggaaagg atacagacag cgcctggaat tgtcagacat ataccaaatc 120
ccttctgttg attctgctga caatctatct gaaaaattgg aaagagaatg ggatagagag 180
ctggcttcaa agaaaaatcc taaactcatt aatgcccttc ggcgatgttt tttctggaga 240
tttatgttct atggaatctt tttatattta ggggaagtca ccaaagcagt acagcctctc 300
ttactgggaa gaatcatagc ttcctatgac ccggataaca aggaggaacg ctctatcgcg 360
atttatctag gcataggctt atgccttctc tttattgtga ggacactgct cctacaccca 420
gccatttttg gccttcatca cattggaatg cagatgagaa tagctatgtt tagtttgatt 480
tataagaaga ctttaaagct gtcaagccgt gttctagata aaataagtat tggacaactt 540
gttagtctcc tttccaacaa cctgaacaaa tttgatgaag gacttgcatt ggcacatttc 600
gtgtggatcg ctcctttgca agtggcactc ctcatggggc taatctggga gttgttacag 660
gcgtctgcct tctgtggact tggtttcctg atagtccttg ccctttttca ggctgggcta 720
gggagaatga tgatgaagta cagagatcag agagctggga agatcagtga aagacttgtg 780
attacctcag aaatgatcga gaacatccaa tctgttaagg catactgctg ggaagaagca 840
atggaaaaaa tgattgaaaa cttaagacaa acagaactga aactgactcg gaaggcagcc 900
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tctgtgcttc cctatgcact aatcaaagga atcatcctcc ggaaaatatt caccaccatc 1020
tcattctgca ttgttctgcg catggcggtc actcggcaat ttccctgggc tgtacaaaca 1080
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aagacattgg aatataactt aacgactaca gaagtagtga tggagaatgt aacagccttc 1200
tgggaggagg gatttgggga attatttgag aaagcaaaac aaaacaataa caatagaaaa 1260
acttctaatg gtgatgacag cctcttcttc agtaatttct cacttcttgg tactcctgtc 1320
ctgaaagata ttaatttcaa gatagaaaga ggacagttgt tggcggttgc tggatccact 1380
ggagcaggca agacgagctt gctcatgatg atcatgggcg agttagaacc aagtgaaggc 1440
aagatcaaac attccggccg catcagcttt tgcagccaat tcagttggat catgcccggt 1500
accatcaagg agaacataat cttcggcgtc agttacgacg agtaccgcta tcgctcggtg 1560
attaaggcct gtcagttgga ggag 1584

<210> 102
<211> 323
<212> DNA
<213> Artificial Sequence

<220>
<223> trans-splicing domain of CFTR PTM

<400> 102
gtaagatatc accgatatgt gtctaacctg attcgggcct tcgatacgct aagatccacc 60
ggtcaaaaag ttttcacata atttcttacc tcttcttgaa ttcatgcttt gatgacgctt 120
ctgtatctat attcatcatt ggaaacacca atgatatttt ctttaatggt gcctggcata 180
atcctggaaa actgataaca caatgaaatt cttccactgt gcttaatttt accctctgaa 240
ttctccattt ctcccataat catcattaca actgaactct ggaaataaaa cccatcatta 300
ttaactcatt atcaaatcac gct 323

<210> 103
<211> 165
<212> DNA
<213> Artificial Sequence

<220>
<223> PTM binding domain

<400> 103
gctagcaata atgacgaagc cgcccctcac gctcaggatt cacttgcctc caattatcat 60
cctaagcaga agtgtatatt cttatttgta aagattctat taactcattt gattcaaaat 120
atttaaaata cttcctgttt cacctactct gctatgcacc cgcgg 165

<210> 104
<211> 225
<212> DNA
<213> Artificial Sequence

<220>
<223> trans-splicing domain of CFTR PTM

<400> 104
aataatgacg aagccgcccc tcacgctcag gattcacttg ccctccaatt atcatcctaa 60
gcagaagtgt atattcttat ttgtaaagat tctattaact catttgattc aaaatattta 120
aaatacttcc tgtttcacct actctgctat gcacccgcgg aacattatta taacgttgct 180
cgaatactaa ctggtacctc ttctttttt tttgatatcc tgcag 225

<210> 105
<211> 3069
<212> DNA
<213> Artificial Sequence

<220>
<223> CFTR PTM sequence

<400> 105
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agtggaagaa tttcattctg ttctcagttt tcctggatta tgcctggcac cattaaagaa 120
aatatcatct ttggtgtttc ctatgatgaa tatagataca gaagcgtcat caaagcatgc 180
caactagaag aggacatctc caagtttgca gagaaagaca atatagttct tggagaaggt 240
ggaatcacac tgagtggagg tcaacgagca agaatttctt tagcaagagc agtatacaaa 300
gatgctgatt tgtatttatt agactctcct tttggatacc tagatgtttt aacagaaaaa 360
gaaatatttg aaagctgtgt ctgtaaactg atggctaaca aaactaggat tttggtcact 420
tctaaaatgg aacatttaaa gaaagctgac aaaatattaa ttttgcatga aggtagcagc 480
tatttttatg ggacattttc agaactccaa aatctacagc cagactttag ctcaaaactc 540
atgggatgtg attctttcga ccaatttagt gcagaaagaa gaaattcaat cctaactgag 600
accttacacc gtttctcatt agaaggagat gctcctgtct cctggacaga aacaaaaaaa 660
caatctttta aacagactgg agagtttggg gaaaaaagga agaattctat tctcaatcca 720
atcaactcta tacgaaaatt ttccattgtg caaaagactc ccttacaaat gaatggcatc 780
gaagaggatt ctgatgagcc tttagagaga aggctgtcct tagtaccaga ttctgagcag 840
ggagaggcga tactgcctcg catcagcgtg atcagcactg gccccacgct tcaggcacga 900
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aacgaagaag acttaaagga gtgctttttt gatgatatgg agagcatacc agcagtgact 1140
acatggaaca cataccttcg atatattact gtccacaaga gcttaatttt tgtgctaatt 1200
tggtgcttag taatttttct ggcagaggtg gctgcttctt tggttgtgct gtggctcctt 1260
ggaaacactc ctcttcaaga caaagggaat agtactcata gtagaaataa cagctatgca 1320

gtgattatca ccagcaccag ttcgtattat gtgttttaca tttacgtggg agtagccgac 1380
actttgcttg ctatgggatt cttcagaggt ctaccactgg tgcatactct aatcacagtg 1440
tcgaaaattt tacaccacaa aatgttacat tctgttcttc aagcacctat gtcaaccctc 1500
aacacgttga aagcaggtgg gattcttaat agattctcca aagatatagc aattttggat 1560
gaccttctgc ctcttaccat atttgacttc atccagttgt tattaattgt gattggagct 1620
atagcagttg tcgcagtttt acaaccctac atctttgttg caacagtgcc agtgatagtg 1680
gcttttatta tgttgagagc atatttcctc caaacctcac agcaactcaa acaactggaa 1740
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atgatttttg tcatcttctt cattgctgtt accttcattt ccattttaac aacaggagaa 1980
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aagttcattg acatgccaac agaaggtaaa cctaccaagt caaccaaacc atacaagaat 2160
ggccaactct cgaaagttat gattattgag aattcacacg tgaagaaaga tgacatctgg 2220
ccctcagggg gccaaatgac tgtcaaagat ctcacagcaa aatacacaga aggtggaaat 2280
gccatattag agaacatttc cttctcaata agtcctggcc agagggtggg cctcttggga 2340
agaactggat cagggaagag tactttgtta tcagcttttt tgagactact gaacactgaa 2400
ggagaaatcc agatcgatgg tgtgtcttgg gattcaataa ctttgcaaca gtggaggaaa 2460
gcctttggag tgataccaca gaaagtattt atttttttctg gaacatttag aaaaaacttg 2520
gatccctatg aacagtggag tgatcaagaa atatggaaag ttgcagatga ggttgggctc 2580
agatctgtga tagaacagtt tcctgggaag cttgactttg tccttgtgga tgggggctgt 2640
gtcctaagcc atggccacaa gcagttgatg tgcttggcta gatctgttct cagtaaggcg 2700
aagatcttgc tgcttgatga acccagtgct catttggatc cagtaacata ccaaataatt 2760
agaagaactc taaaacaagc atttgctgat tgcacagtaa ttctctgtga acacaggata 2820
gaagcaatgc tggaatgcca acaatttttg gtcatagaag agaacaaagt gcggcagtac 2880
gattccatcc agaaactgct gaacgagagg agcctcttcc ggcaagccat cagcccctcc 2940
gacagggtga agctctttcc ccaccggaac tcaagcaagt gcaagtctaa gccccagatt 3000
gctgctctga aagaggagac agaagaagag gtgcaagata caaggcttca tcatcatcat 3060
catcattag 3069

<210> 106
<211> 500
<212> DNA
<213> Artificial Sequence

<220>
<223> reverse complement of trans-spliced product comprising cystic fibrosis transmembrane regulator-derived sequences and His tag sequence

<400> 106
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tggcaactag aaggcacagt cgaggctgat cagcggttta aacttaagct tggtaccgag 120
ctcggatcca ctagtccagt gtggtggaat tctgcagata tccagcacag tggcggccgc 180
ctaatgatga tgatgatgat gctcttctag ttggcatgct ttgatgacgc ttctgtatct 240
atattcatca taggaaacac caaagatgat attttcttta atggtgccag gcataatcca 300
ggaaaactga gaacagaatg aaattcttcc actgtgctta attttaccct ctgaaggctc 360
cagttctccc ataatcatca ttagaagtga agtctgcagg aaaaaaaaga agaggtacca 420
gttagtactc gagcaacgtt ataataatgt tccgcggata atgacctaat aatgatgggt 480
gggcccgttt aaacgctagc 500